

# THE MINING AND METALLURGICAL JOURNAL.

FORMERLY THE PACIFIC COAST BULLION.

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Los ANGELES, CAL., NOVEMBER 15, 1896

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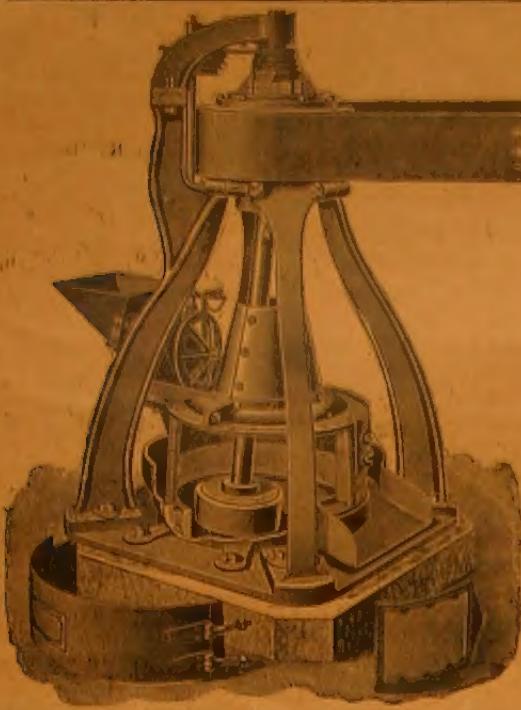
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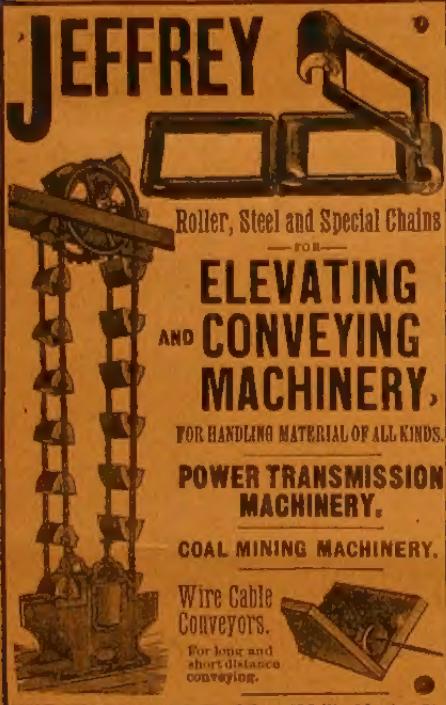
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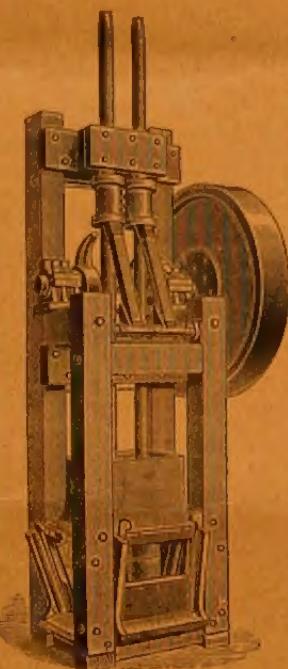
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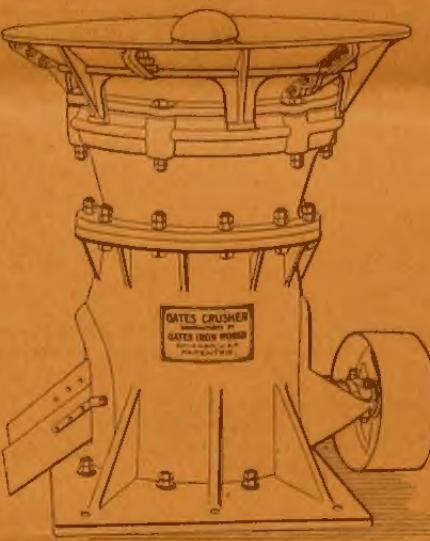
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mento has a mill of 50 tons per day capacity, which is turning out gold steadily. The Overland, Brickyard, Wonder, Heckla, Northern Light, Red Cloud, Gold Dust, and others are erecting cyanide mills of fifty tons capacity.

The ores of Camp Floyd are an absolute cyanide proposition, and can be mined and treated for less than \$1.75 per ton. No free gold has ever been seen in the camp, and the formation has proved of much interest to mineralogists.

Among the other prominent camps in the state can be mentioned Tintic, Frisco, where the great Horn Silver mine is located, Milford, Big and Little Cottonwood, Stockton, Alta, Hardscrabble and many others, and Utah is undoubtedly entering upon an era of prosperity in mining, that will soon put the mineral output of the state among the leaders in the United States.

All the mines, such as the Ontario, have shown better values with depth, and capital is now directed towards many mining districts in Utah where a few years ago the sound of the drill was not heard. The state has gone through the same trials and tribulations that have beset most mining countries, but has arisen Phoenix-like, and taken its proper place among the bullion producers, and will hereafter contribute a liberal share to the wealth that is making the United States the greatest country in the world. As a field for the miner, Utah has few equals and no superiors.

#### REVIVAL OF BUSINESS.

It is always the case that business is more or less suspended during a presidential canvass. For the last few months it has been affected to an unusual extent in consequence of the extraordinary interest the people have taken in the questions involved. The election has taken place, and for four years the policy of the executive department will be known, and it will continue for four years. It will have to be submitted to, and it is to be hoped that the people will at once address themselves to the work of development of resources and revival of business. We think they will, and that within thirty days there will be a marked improvement.

We do not think the goldites will dare press the thumbscrew as severely as is apprehended by many, for there has been such an immense adverse vote cast that they will think it unwise to provoke any more hostility. They may not have any more sense than the slave power had after the election of 1856, and if they do not they will again illustrate a Roman saying that "whom the Gods would destroy they first make mad."

Nor do we believe they will hold back and attempt to block the wheels of energy and industry, but that they will join the people in efforts to revive business and put the country on the highway of prosperity.

Though we may be optimists in these views we prefer to be such rather than to be pessimists. Let us all have hope and go to work.

#### SYMPTOMS OF BETTER TIMES.

After the people have gone through a presidential campaign they naturally fall back to business for a change and relief. They realize that for a time issues have been settled and they acquiesce whether satisfied with the result or not. It is known what the execu-

tive policy will be for four years and they are ready to adapt themselves to it.

Settlement itself is a basis for confidence. Men rejoice that they can safely embark in enterprises and put out their money, if they have it. Therefore we may look for improvement to a greater or less extent. The moneyed and business men of Los Angeles should realize this and make the most of it.

While capitalists are willing to invest the railroad to Salt Lake should be pressed with vigor. We need it, and it is the most important of all enterprises with which this city can be connected. The completion of that road will bring with it other enterprises to build up and enrich our people. A good harbor at San Pedro or Santa Monica is assured, and only awaits location by the commission lately appointed to be commenced and as rapidly constructed as practicable. Our transportation facilities will then be complete, and will excel those of any other city on the Pacific Coast. The greatest prosperity and growth will then be assured. Let there be no delay in taking hold of the railroad project. The country may need more money than it has, but the volume will not be increased materially for some time, and it is the worst of policies to wait for it before taking energetic steps to do all that can be done under existing conditions.

#### LET EXPECTATIONS BE SENSIBLE.

There has been business dullness for several years, and in the campaign just ended the people on all sides have intended to act in such a way as that better times will be the outcome from the election. Probably general expectations of prosperity have been too florid, and politicians have been so fulsome in their praise of candidates or predictions as to the results of policies that they are responsible in a great measure for the confidence that the immediate future will bring marked prosperity. McKinley has been called "the advance agent of prosperity."

We have no idea that realization will be anywhere near expectations that have been created. There is no human power that can make it so, any more than one who through long illness has become emaciated and weak can leap suddenly into good flesh and strength. However effective any policy may be, results will not be felt in a day or month to any appreciable extent.

The McKinley panacea for our distress is tariff legislation that will supply the government with sufficient money to meet expenditures, that will encourage and protect our industries that our people can have access to our markets without crushing competition from foreigners, and that thereby there will be such a diminution of importations that there will not be adverse balances of trade to be paid in gold.

All this is very well, and if accomplished our domestic conditions will be materially improved. But the president cannot do this alone; he must have a Congress in accord with him, which will send him bills to approve that will give effect to his remedy for our ills. It is unfortunate that there is doubt about the Senate, and if not in accord with President McKinley's views no relief in the line stated will come through legislation for more than two years. It seems hardly possible that those Senators who believe in both free silver coinage and a protective tariff can stand out against the latter in order to force the former. It is not supposable that the President and House of Representatives

will yield to free silver coinage when they have been elected expressly to oppose it. The silver Senators were not elected to oppose a protective tariff.

We hope for the best, and that the people will do all in their power to bring prosperity even if disappointed by the result of the election. If we cannot obtain a larger volume of money, we must make the best use of what we have. Let us not make the condition worse by spending time in clamoring and croaking instead of work. We can add to our money volume by producing more for our own consumption, and causing balances in international trade to be in our favor.

#### OUR FOREST RESERVATIONS.

Within the last month, forest fires have been burning in the Los Angeles County Reservation. One of these fires started in Soledad Canon, south of Ravenna, and swept through the brush to the canons north of Pasadena. Another fire has been burning on the west side of big Baldy mountain for two weeks at least, and destroying both brush and standing timber. It is some miles to the south of the gold mines located on north Baldy mountain, and is said to have been caused by camping parties.

At the regular monthly meeting of the Southern California Academy of Sciences, held on Tuesday evening, 13th October, 1896, at the Friday Morning Club Hall, No. 330½ South Broadway, the following papers were presented: "A Mazamas Visit to the Wonderful Crater Lake on the Summit of the Cascade Mountains," by T. S. Van Dyke, and "The Art of Assaying," by Irwin M. Wade.

The Secretary intimated that, at a meeting of the Executive Committee, held September 26, a resolution, introduced by Abbot Kinney, was passed as follows: "The Southern California Academy of Sciences send greeting:

"RESOLVED, that the welfare of Southern California demands the preservation of the mountain watersheds. The only serious damage to the mountain watersheds and government forest reservations in this part of California is due to fire. Forest fires diminish the water-holding power of the mountains, diminish the summer flow of springs and increase torrent and flood action.

"RESOLVED, that we believe a system of management with a forest patrol is an immediate essential for the safety of the large horticultural, farming and city population of our valley.

"RESOLVED, that we invite your co-operation in securing such management for our mountain forests as will prevent the present destructive fires, and suggest that your organization forward appropriate resolutions to the President of the United States, and to the Secretary of the Interior, also, our Senators and Representatives in Congress."

The above resolution is being forwarded for signatures to the various scientific, educational and commercial institutions on the coast.

These resolutions are good so far as they go, but they are a very poor half-measure of protection and care of the forest reservations. These forest reservations have been burnt over time and again, indeed, there are few square miles within their borders that have not been burnt over once. The fires destroy the brush and almost all the standing timber on the south and west hill slopes, as the prevailing winds are from the south and west, but on the north and east sides the brush only is consumed and the trunks of the standing

timber are injured. Once the bark is injured by fire it dries up and falls off in places, and this gives the saw-flies or horn-tails, as they are called by entomologists, a chance to deposit their eggs in the sapwood of the standing but injured tree, and the borers or grubs soon destroy the little life left. Unless some attempt is made at tree planting, the future usefulness of the reserve is of short duration. The time to plant or reforest is before all the standing timber dies out, as mentioned. After a fire has passed through a forest, the nature of the soil or chemical constituents of the soil are somewhat changed. The result of the burnt brush and timber has increased the potash salts in the soil, and made it more suitable for the production of hard woods and brush than for the growth of young pines and firs, consequently, the act of self-seeding does not go on in this somewhat dry climate as it does in districts where the rainfall is greater. Therein arises the necessity for planting the original forest trees. Unless a young growth of forest trees is produced by natural or artificial means, the reserve soon becomes a waste of brush, with few standing trees. As the reserves embrace in their limits valuable mineral deposits, and in Los Angeles County include our most valuable and largest mineral area in the county, it is necessary for the agricultural and mining interests of the section that a wise system of forestry and protection be established for planting and also cutting dead trees where necessary, under a plan similar to the forest systems of European countries.

Our mining interests are too important and valuable to the industries of this section to have these reserves closed against the operation or prospecting for mines within their limits.

As pointed out in our issue of 15th September, in the article on "Water for Irrigation and Mining in the Southwestern States," we do not at present store the winter or summer rain-fall in the mountain sections, and are far behind Australia in this respect.

#### PARTY RECONSTRUCTION.

Once a Democrat or Republican always a Democrat or Republican is the motto of those only who never learn anything new, and who having formed opinions adhere to them as a matter of consistency. To change is not proof of fickleness or inconsistency; indeed, if it is done intelligently, and for a good reason, it is the best evidence not only of consistency but of wisdom. The most consistent man is he who unswervingly follows his conviction. It is the fool or the moral coward who never changes.

In matters of government, new questions are constantly arising, and men of observation and reflection are almost as constantly revising their opinions, which naturally lead to reconstruction of political parties to a greater or less extent. The personnel of parties has never remained the same for any length of time. It is often said there is a floating vote which goes from one side to the other, and that it is large enough when parties are anywhere near equal to change the result of elections. This floating vote has been supposed to be that of men who have no opinions, and are moved by impulse rather than by reason. At an early date in our history, there was ground for considering the floating vote to be of that character, but there has been a decided advancement of the masses in intelligence and independence. The floating vote, if it is proper to give it that designation,

is by the intelligent and conscientious. It is that vote which is now more likely to control elections than the vote of the ignorant or corrupt. Men who pride themselves on their unchangeableness in politics have certainly not read the history of their country to advantage.

In 1860, parties fell to pieces and were reconstructed. Those who had been opponents were found working together in new organizations. They went to pieces again in 1824, and by 1828 new organizations were formed, and in 1840 there was another reconstruction. The whig party passed out of existence in 1856, and the Republican party came into existence. During the war there was a tremendous secession from the Democratic, and, since the war, changes have been frequent from one party to another, and in the formation of new parties.

Reconstruction has been going on in the present campaign, and whatever may be the result of the election, there will exist two reconstructed parties. On the issues presented, Democrats have gone over to the Republicans and Republicans have gone over to the Democrats, who regarding the financial as the paramount question, have waived their tariff notions and will continue to hold them in subordination until the money question is settled. So it is with protective tariff Republicans. The number of Democrats who do not like the young Americanism of Bryan, have joined and will remain with the moss-back Republicans. In the reconstruction, activity and progress will be pitted against fogeyism. One side is and will continue to be positive and the other negative. It is upon these lines that all parties have re-formed and waged their political battles.

#### CORRESPONDENCE

CHICAGO, Ill., Nov. 9th, 1896.

EDITOR JOURNAL:—Observing that your columns are full of the latest mining intelligence, and thinking that you may care for items, I can give you the following:

The Wrexham gold mine, owned by the Arizona and Mineral Creek Gold Mining and Milling Company, will begin operations in the near future. The Wrexham is located in the Mineral Creek mining district, in Pinal County, A. T., a little to the north of the Ray copper mine, and is generally regarded as being the greatest property, amount of development work considered, that there is in the territory.

The Gila Syndicate has been organized in the city of Milwaukee, for the purpose of prospecting for gold in the Mineral Creek mining district and along the upper Gila. The district is known to be very rich, and the Syndicate confidently expects to acquire some very valuable properties.

The Blue Mountain mining district, in San Juan County, Utah is beginning to attract considerable attention, though only about two years old, the camp already has two mills in active operation and a number of shipping mines. The Gold Queen is regarded as a veritable bonanza property, and claims adjoining are considered equally valuable, needing only a moderate amount of further development to prove up good ore bodies. The Mahatma will probably be the next shipper.

W. P. DUNHAM.

There is great activity at Goldstone, Idaho's new camp, which is twenty miles northwest of Salmon City.

#### Miscellaneous Mining News.

##### ARIZONA.

A rich gold prospect has been located by Messrs Williams and Chapman, three miles south of Prescott, near Granite creek. Ten tons of the ore have been taken out preparatory to working at the Silver Flake mill, two miles distant from the mine. Ore shows well in free gold. Ledge is three feet wide, all showing gold to the naked eye. This is probably one of the ledges which furnished the rich placer diggings in England Gulch in early days. The dirt around the discovery is said to pan out gold. The ledge was discovered through the breaking of a piece of float, the good appearance of which caused digging, which exposed the ledge a few feet from the surface.

Word comes to Prescott, from Hassayampa district, that a very large body of ore has been struck in the Addie mine, which has been worked for several months past by Prof. Comstock, under bond. The ore carries copper, gold and silver. About 700 feet of development work has already been done, mostly tunnel, and the work goes steadily forward, with very flattering prospects ahead.—*Prescott Courier*.

About one half mile from Alder Springs, northwest of Prescott, a ledge was recently discovered by John Smith which, with development, promises to be a big mine. The pay streak is said to be from six to ten feet wide, and ore taken from across the entire width gave an assay return of \$12.90 per ton, gold; ore was not assayed for silver, but evidently contains that metal, as black sulphide can be seen in the rock. Eph Meador is partner with Mr. Smith in the claim, which they propose to develop as fast as possible.

Robert Williams and others, who are engaged in placer mining in Cook canyon, just a short distance on the Prescott side of Palace station, have opened up some very rich ground that is paying them very handsomely. They expect to clean up about \$2,000 from a strip of ground about eighty feet long.

Some recent rich finds at Pearce goes to show that the camp is one of the richest in the southwest and that the little mining town has a bright future in store.

Prof. J. F. Blandy has been elected secretary of the Prescott Mining Exchange, vice R. H. Hetherington resigned. Prof. Blandy will take charge at once and will give it his personal attention.

W. C. Bashford has fifteen men at work in the Jersey Lily mine. He is working three eight hour shifts in sinking the shaft, which is now down 213 feet. The mine is looking in fine condition, there being fine bodies of ore exposed in all the openings.

Gil. S. Ferguson is developing a fine piece of mining property on the Hassayampa.

Frank Miller has located the Lucky Cuss mine in Vulture district.

D. B. Gillette has shipped a big hoist out to his Gold Note mine near Bumble Bee. He is pushing development work as rapidly as possible on his properties there.

A rich strike is reported on the Blind Goddess, a claim, near Kingman, owned by Henry Ewing and others.

The Coconino Mining Company has purchased a small smelter, and will try the experiment of smelting the copper ores from the mines on the rim of the Grand canyon. The smelter will be erected at Rowe's well. C. H. McClure, J. Halford and John Marshall went to that point from Flagstaff to put up the machinery and test the furnace.

Frank Kirkland, the mining man, who returned to Phoenix the first of the month from a trip up north, reports the finding of a rich prospect two miles east of Vulture. Three Mexicans, who were prospecting in the neighborhood, found some float that gave indications of carrying considerable gold. There was no indication of a ledge around, but they concluded to sink a few feet for luck. They dug down two feet and struck a blind lead which showed up well. They got out two tons of the ore with an arrastra, which netted about \$60 a ton. It gives promise of being even richer. The ore is free milling and the lead is about two feet wide.

The Coconino Mining Company have purchased a small smelter, and will try the experiment of smelting the copper ores from the mines on the rim of the canyon. The smelter will be erected at Rowe's well. C. H. McClure, J. Halford and John Marshall left Flagstaff, Tuesday, October 13th, for that point to put up the machinery and test the furnace.

The new thirty-ton stamp mill, at the Old Glory mine, at Oro Blanco, was started Oct. 19th, for a test run. Major Fechet, the superintendent of the property, was sanguine as to the results. The erection of the machinery has just been completed and this test run was authorized by an order of the court. It will probably decide the future operations of this property, which has been in litigation for some time past. The expenses of the test were paid by Stillson Hutchins, who is the person most deeply interested in the result.

#### HIS FORTUNE.

##### A Poor Miner of Tombstone who Found a Fortune.

Eighteen months ago John Pierce of Tombstone, Arizona, was a poor laboring miner, broken down from hard work, his wife and children being obliged to help in making a living. Late one evening, at the time the story begins, Pierce was driving the cows home from pasture and was about four miles from his ranch, when he picked from a little ledge a piece of rock which he was about to throw at one of the tardy animals when observing that it was of unusual weight, he concluded to carry it home. Upon close examination it was found that it contained gold.

He went to work promptly at the spot from which it had been taken, and soon made a shipment of ore that netted \$3,000. With this money he sank a shaft a few feet and then bonded the property for \$250,000.

Before the year expired the bond was sold to an English syndicate for an advance of \$100,000. In July last Pierce received a draft on San Francisco for \$250,000 in full, and is now in that city with his family, enjoying the delights and blessings of a fortune.

#### Cutting Off the Coal Fields.

County Surveyor Samuel Logan left Oct. 12th, with a corps of men, to begin the work

of surveying the line which has been ordered to cut the Deer Creek coal fields from the San Carlos Indian reservation. The beginning of this work was delayed several weeks by the non-arrival of the necessary and definite instructions from Washington. The work will now be hurried forward as fast as possible, and Mr. Logan expects that he will be able to complete the work inside of forty days and, with good luck, he may complete it inside of a month.

There are a number of men now located on both coal and gold and copper claims in this mineral district who have been simply there holding their locations for several months, not being permitted to do any work until the segregation had actually been made. When this line is run these men can go to work, or make a formal filing on their claims, which will hold them.

The beginning of this survey by Mr. Logan will be hailed with joy by these claimants. Everything points to this district becoming one of the greatest wealth-producing regions ever developed in Arizona.—*Bulletin.*

Dennis Sullivan, of Denver, Colorado, one of the largest mine owners and among the wealthiest men of the Centennial state, was in the city of Phoenix, October 14th, with C. L. Hall. These gentlemen own the Mammoth mine at Goldfield, one of the best producing gold properties of that territory. They bonded the claim three years ago for a period of six months, during which time they took out and disposed of enough ore not only to pay the purchase price of the mine, but to erect a 20 stamp mill. This mill has been kept running ever since at a dividend paying profit.

The Bell Mining Company, which is operating good properties in the vicinity of Wickensburg, Maricopa county, has fitted out with two wagon loads of provisions to be taken to their camp.

#### Cyanide Process at the School of Mines.

A series of experiments has recently been made at the School of Mines, at Tucson, upon the extraction of gold by the cyanide process, with great success. A high per cent of extraction both upon original free milling ores of high grade and on pyritic ores requiring roasting, and upon tailing samples has been attained. The school is now prepared to make laboratory tests by this wonderful process.

The stamp mill has lately been running upon a lot of gold ore from the territory, the returns being made in bullion.

A letter received at Tombstone from Pearce states that the Six Mile Hill property is again being worked and thus far a 28 foot ledge has been laid bare by a cross cut on the surface.

An average assay from the ledge shows from \$15 to \$20 per ton. The immense ledge is believed to be fully 35 or 40 feet wide, and the possibilities of such a showing, should it go down, and there is every reason to believe it will, is at once apparent to every mining man.

There is no question but what this district will, and in fact already is, proving that some of the biggest mining propositions in the west are located there. From the Johnson-Fitts mine comes most encouraging news, and with each day's development this coming property becomes more and more valuable.

James A. Fleming and Dr. Ford, of Phoenix, Arizona, a few months ago took a bond on several claims, known as the Black Copper group of mines, near Globe. The bond was for \$150,000, to run two years. They at once began the development of the property and the expenditure of \$1,000 for that purpose uncovered a large body of copper ore, estimated to be worth about a million dollars. Mr. Fleming went to New York in June, where, despite the timidity of investors on account of the presidential election, he succeeded in perfecting an organization with abundant capital. Mr. Fleming is president of the corporation, which is known as the Black Warrior Copper Company. Mr. Fleming and Dr. Ford take three-fourths of the stock for their share. One-fourth was made treasury stock, of which sales have already been made to the amount of \$50,000. Arrangements have also been made for the sale of an additional block of \$50,000, to be employed in building a smelter.

Wm. Kane, formerly of Prescott is at Fool's Gulch, near Congress, with a full crew of carpenterers and other laborers, putting up the frame of their building for the MacArthur-Forrest Cyanide process. The machinery is being hauled in as fast as it arrives, and Cornish rolls and crushers, not stamps, will be used to reduce the rock to the suitable size for the process. Mr. McGregor and his crew of machinists are busy getting the machinery unloaded.

Col. Crow, of Yarnell, is busy on custom ore.

#### Briggs Notes.

There is talk that the Boaz will soon start up.

The Oro Bella is being worked by some Phoenix people with good results.

Over in Buzzard Roost considerable work is being done. Several mines are being worked on a purchase and lease bond.

The old Briggs smelter and stamp mill are closed down for want of water. Work is soon to be started on the mines, and then the stamps will take a drop or two.

The Barret mill over at the Roost is running right along.

Hon W. C. Davis, of Tucson, is home from his gold property at Harqua Hala. The cyanide process has been instituted at the mine with profitable results. The tanks, however, which have heretofore been made of masonry, are soon to be replaced with wooden ones. This change was necessitated by leakage. By the cyanide process, a saving of nine dollars per ton is made over the plate process.

#### CALIFORNIA.

##### KERN COUNTY.

T. J. Davis, Ed Torrence, W. C. Reed and John Hart got in to Bakersfield from Randsburg November 4th. As they drove from Randsburg to Cameron they met 57 teams of from two to sixteen animals each going to the mines. About twenty of them were loaded with building material, and in a very short time houses will take the place of tents in the new mining town.

It is the universal opinion of people on the mountains that there will be an unprecedented rush to Randsburg immediately after the election. It is said that miners and camp followers are coming west in large numbers from all points in Colorado, the fame of the new "diggin's" having gone abroad.

One thing seems certain. There is little or no use in going there expecting to get employment in the mines at present for no work is offered. Not until some more mills are erected will mining assume important proportions. There is talk of several mills to be erected at once, and doubtless further facilities for working ore will be provided in the not distant future. But at present there is little or no demand for practical miners.—*Echo.*

There were seventy-seven mining locations recorded at the Recorder's office at Bakersfield, Cal., in the month of October.

A Santa Paula man has been out on the desert and reports the most promising outlook he has seen on the coast. Ore not running \$30 or \$40 does not pay to mill. Randsburg has a population of about 500. There are about seventy-five men employed in and about the mines. They are paid \$2.50 to \$3 per day. He says: "I would not advise any one to go there at present looking for employment. As soon as they find plenty of water to mill their ores it will be a good camp and give employment to a large number of men both at the mines and in the mills. It requires about 4000 head of stock to do the various kinds of hauling between Mojave and the mines."

#### EL DORADO COUNTY.

The sale of the famous Mad Mule mining property near Whiskytown was consummated recently. The purchasers are a syndicate of San Francisco capitalists. The new owners will begin active operations to further develop and work the property. They propose to erect a great pumping station on Grizzly Gulch and pump the water through a pipe line over the mountain to the mine, a distance of over a mile.

#### SHASTA COUNTY.

John M. Couish, superintendent of Captain Roberts' mining properties at Harrison Gulch arrived in Redding from Red Bluff Sunday morning to spend several days.

A carload of large sheet-iron pipe consigned to the Trinity Gold Mining Syndicate, limited, arrived in Redding, last month.

Ore is being taken from the Beard mine in Buckeye mining district and brought to Redding preparatory for shipment to the Selby Smelting and Lead company at Vallejo Junction.

Merchant & Reddings are preparing to extensively develop their property. They have a thoroughly equipped mill consisting of Daniel Best engine, Kinkead mill and Springer concentrators. Their success means much to Redding as the district abounds in promising prospects which only await the development of a few to start them all working.

A Lightner patent quartz mill of a capacity of 7 tons per day, arrived at the freight depot in Redding a few weeks ago. It was consigned to John Nation, who will set it up near the Dingley placer mine, three miles west of Redding, and run it as a custom mill.

#### SAN DIEGO COUNTY. (Arizona Sentinel.)

The Golden Dream Company is concentrating its force on the Noonday group, adjacent

to their new mill, where the rich strikes have lately been made.

The cross-cut below in the Little Frank mine is 55 feet in length, all in good ore, with neither wall in sight.

The cross-cut in the Golden Dream is 56 feet in length. All in good milling ore, the north wall having just been struck.

The Vic shaft on the Emerald is down 21 feet, showing up the richest ore on the average ever found in the White Gold Basin.

The Noonday mine leads them all, with its three veins of rich ore. Work in two shafts and two tunnels, all within 1000 feet of the new mill, is being pushed night and day.

Rich ore has been struck on the Golden D. K. mine, which is on the same vein as the Noonday, and also on the Otro Botello de Vino, which is the east extension of the Noonday, both of which now belong to the Golden Dream Company.

Col. Allen is grading the mill site for the new mill. The mill will be run by three Daniel Best oil engines. One for the ten stamps, one for the crusher, and one for the pump, thus saving a large amount of fuel, as those for the pump and rock breaker will only be run when necessary.

The mill site is the prettiest on the Colorado river. More stamps will be added to the mill as fast as the ore bodies will warrant in quality and quantity.

Mr. Page has struck what appears to be a continuous body of very rich ore in the tunnel of the May Queen mine, owned by Louis Iaeger. The May Queen is on the same vein of ore as the Golden Dream and Little Frank mines, which now promises to be the Bonanza of Picacho.

#### TUOLUMNE COUNTY.

Messrs. L. B. Doe and G. F. Dyer of San Francisco arrived in Sonora Oct. 19th, and next day visited the Whitto mine near Soulsbyville with Mr. W. B. Moore. It is one of the old mines of the county upon which no work has been done for several years. It is now being reopened by Messrs. Moore and Doe, and vigorous work is being done on it. The mine has the reputation of being one of the high grade ones of the county. This was shown by mill work to a depth of 300 feet the present depth of the shaft and workings. Thus are all the old mines of the county coming to the front as heavy gold producers under the influence of improved mining and milling methods.

The body of good ore recently discovered at the Mammoth in Tuolumne county, gives evidence of being larger in extent than at first supposed to be. The new cyanide plant at the Black Oak is giving good satisfaction treating ores from that mine.

#### COLORADO.

##### Cripple Creek Notes.

The Grouse company shipped 30 tons of ore to the Brodie mill and two tons of \$300 ore to the sampler last week.

A recent shipment from the Pharmacist of 34 tons of ore, averaging \$75 per ton is a sufficient reason for the better prices at which the stock is selling.

Work has been resumed on the Rattler after having suspended for a week or two. Sinking will be continued in the north 70-foot shaft, which is equipped with a whim.

During the last month the Vindicator property has marketed \$8000 worth of ore, and the ground now opened assures a heavy increase in this amount during November.

The Anchoria-Leland for September produced between 400 and 500 tons of ore, the value of which ranges from three to five ounces. The month's output will average fully \$45,000.

Several big strikes were made on the Dante mine the past week. Ore assaying as high as \$1200 from a four-inch streak, while the entire vein will assay high, much of it over \$100 to the ton.

The Grouse has now an output of 50 tons of ore per month. The first-grade ore samples from \$200 to \$260, while the second grade is about three ounces. The new shaft house and ore house is about completed.

A three-foot vein has been opened up in the Big Simon on the Lawrence townsite. A considerable body of high-grade talc encountered is being separated from the bulk of the ore being taken out. Two cars recently settled for returned \$300 to the ton. Fifty men are employed on the lease.

The officers of the Gold Standard company show the settlement sheet for the four-ton lot of high-grade ore shipped a few weeks ago from the Findlinger lease on the Mountain Monarch. The ore sold for \$1200, or \$300 per ton, and of this the Gold Standard company receives 25 per cent royalty.

The Garfield-Grouse, a fractional claim of nearly five acres on Bull Hill, has just declared its initial dividend. The property has been worked under lease for two years, the present lease continuing until April 1st, 1897. The royalties paid are 33 1/3. The lessees feel sanguine that they can take out \$80,000 per month.

Lessees on the Hull city placer at Independence are meeting with success in finding pay ore. The second shipment of ten tons was made Monday, November 2nd from this lease, and ran \$50 to the ton. The ground has been divided into blocks of 300 feet square, and several sets of lessees have already taken hold.

Five sets of lessees are now at work on the Sheriff on Raven hill. Len Jackson, one of the owners and lessee as well, is sinking a large double compartment working shaft and saving enough ore from development to make a nice shipment about once a week. The shaft is down fifty feet and the values are holding out well. The only other lessees in pay ore are the Carrington Brothers on the south end, from which occasional shipments of mill ore are made.

Partial smelter and mill returns on 49 cars of Elkton ore have been received, amounting to \$17,102.49. The cash reserve fund of the company the last of October stood at \$136,000, while the estimated net earnings for October are placed between \$30,000 and \$35,000. The next pay roll and dividend day will be on November 10th. It is safe to predict a monthly output of between \$75,000 and \$100,000 when the fourth and fifth levels have been started.

On the north end of the Nightingale C. H. Brown is pushing development on the vein cut in the tunnel 130 feet from its mouth, and has shipped 25 tons of ore to the Brodie mill since the strike was made three weeks ago.

The last shipment was of 15 tons November 6th, the ore running from  $1\frac{1}{2}$  to 2 ounces to the ton with very little sorting. The breast of the drifts, fully four feet in width, is practically all ore and an assay from samples across the three feet taken November 6th returned \$81 to the ton.—*Cripple Creek Mail.*

#### NEVADA.

The reopening of the Cortez mine is significant. It indicates that the owners of the property are confident of a rise in the price of silver, or else it will pay to produce silver even at its present low value. The former is more probable. This mine is the most important silver property in Nevada, and the placing at work of 200 men means a great deal.—*News.*

Some very flattering reports come from the Golden Web mine. The main ledge is said to be very rich, and an addition of 10 stamps is about being made to the mill, which is already running 20 stamps.

#### The Growth of DeLamar.

R. E. Wilkinson, formerly superintendent of the DeLamar Mining Company, says that property is one of astonishing richness. The output runs each month over \$200,000, and the bullion wagon, with its armed attendants, is steadily reducing the interval between trips to the railway. The camp has been of very permanent growth, says Mr. Wilkinson, and while fault has been at times found with its sanitary conditions, those who are interested have brought to it as many comforts as are to be found in the diggings of any country. He believes that developments now in progress will greatly stimulate its growth during the next few months.

Advices from the property of the Dexter Mining Company, at Tuscarora, denote the most gratifying condition of affairs in that locality. The machinery for the new Kinkead mills is now upon the ground and is being rapidly set up. The company has made a contract with the Tuscarora Water Company that will afford it abundant power with which to operate its plant and the output should be doubled in the next ninety days. A large shipment of cyanides reached Elko last week. The property presents a better appearance now, according to reports, than at any period since the present company obtained possession, and the force of miners will be steadily increased.

Work was begun on the Star and Grey Eagle mines, at Cherry Creek, on the 24th ult., and is now being pushed by Messrs. Otto Stallman and Joseph Farren, of Salt Lake City, as rapidly as men and money can do it. We know these gentlemen have one of the best gold and silver properties in the state, and we welcome them to our town.

The North Mountain Mining Company's mill and mines at Cherry Creek are running in full blast and reducing the regular quantity of ore each day, the cyanide process being a perfect success, saving all the gold and 70 per cent of the silver contained in the ore. We are now proving our claim, that all we need in this district is capital to open the mines. This company's mines lay idle for thirty years before the present owners took hold of them, and they are now reaping a rich harvest from a few thousand dollars invested. We wish them all the success possible.—*White Pine News.*

The *Carson News* of November 7th states that the only important silver mine in Nevada, after being closed for some time, will at once open in full blast. Two hundred men have been engaged to commence work at once and others will be put on later. The mine is strictly silver.

There are more men now at work in the mines at Silver Peak in Esmeralda county than for several months past. No new men, however, are being put on, except to fill vacancies. Reports to the contrary notwithstanding, there is every reason to expect the work there to go right along, and most likely under its present management.

#### LOWER CALIFORNIA.

John McCool has received word at Hemet, Riverside county, California, from the mineral agent of Lower California that his patent for a group of mines he has located has been issued by the President of Mexico. The same letter contained a permit from the department allowing him to go to work on the development of his mines. This comes to Mr. McCool as a piece of good luck at the right time. His mines are of the placer class and in connection with the claims he has an abundance of water with which to work them. They are located near Ensenada.

#### A Mammoth Water Wheel.

The Pelton Water Wheel Company, of San Francisco, Cal., have recently furnished the Alaska Gold Mining Company, of Douglass Island, Alaska, a wheel of such extraordinary dimensions as to make a brief description of interest.

The wheel is 22 feet in diameter, and is directly connected to the shaft of a Reidler Dulex Compressor, with air cylinders, 24 inches in diameter x 38 inch stroke, having a capacity of delivering 2,800 cubic feet of free air per minute, at a pressure of 80 lbs. per square inch.

The wheel weighs 25,000 lbs. and serves the purpose of a fly wheel as well as prime mover. It runs under a water head of 480 feet, at a speed of 75 revolutions, and develops upwards of 500 horse power.

A hydraulic speed regulator is attached to the wheel, which controls its movement, so that a uniform air pressure is maintained on the receiver.

The wheel is made of this large diameter to give proper speed to the compressor under the head in this case available.

This is probably the largest tangential wheel ever constructed, and shows the remarkable facility with which Pelton wheels can be adapted to unusual and extraordinary conditions. In a case like this, the transmission machinery, to carry such an amount of power, would involve a heavy outlay, as well as constant expense in maintenance, besides a material loss of power: a direct connection to water wheel of machinery operated without intermediate gearing is, therefore, of great advantage wherever possible.

There has been considerable activity during the season in American Fork canyon district, Utah, but in a few weeks operations will be suspended for the winter.

The old Mono mine at Ophir, Utah, which was capable at one time of earning \$80,000 per month, and brought a price of 400,000, was sold the other day at a receiver's sale for \$350.

#### MEXICO.

One of the richest men in Mexico is Maximilian Damm, a German by birth. He lives in an old monastery in Durango, and enjoys an income of nearly \$700,000 a year from his silver mine, El Promontorio. He began life in Mexico as a clerk. Finally he went into business for himself, and while he was visiting in Germany, his manager took what he supposed to be a worthless mine for a bad debt. It is this mine from which he is now deriving his great income.

It is assured that a powerful mining company of the capital of the republic will purchase the mining concern, La Piramide, situated in San Jose de Garcia, Si., for \$1,500,000, (silver).

The mineral company, Guadalupana, of Rosario, Si., is progressing well with its work. Valuable ores have recently been discovered.

The Las Amarillas mines (Sonora) are producing from \$110,000 to \$120,000 gold monthly.

It is said that in a recent week 2000 cargas, (carga of ore is 300 pounds) of ore of good average were extracted from the San Rafael mine, near Pachuca, state of Hidalgo.—*La Nueva Prensa.*

The Flor de Maria mine, in the Sierra de Moctezuma, district Bravos, Chih., is being worked with good success. Its ores run 40 or 50 ounces per ton, with 20 to 30 per cent of lead. It is situated very favorably for transporting its products, being 25 or 30 miles east of Moctezuma station on the Central road.

The three mills and roasters of the Colorado-Creston Company and the two mills of the Amarillas Company, at Minas Prietas, So., are running night and day to their fullest capacity.

The following is condensed from a recent report of the state government of Sinaloa, as published in *La Federacion*, of Mexico: Among the important minerals found are gold, silver (in a great variety of forms), gold and silver mixture, copper (in filaments and crystals). There are in operation six concerns of the first order, which reduce 144,000 tons, at an average of \$30 a ton, making an annual product of over \$4,300,000; ten concerns of the second order, which reduce 48,000 tons, at \$50—a total annual product of \$2,400,000. There are besides a number of other concerns of which figures are not given. The district of San Jose de Gracia is at present causing surprise by its gold production. It is estimated that 5000 men are employed, and the mineral product already exceeds \$8,000,000, and is rapidly increasing. The machinery in operation is of the most modern pattern. Various systems of smelting are in use.

A wagon road is to be built from Marathon, Tex., to the lead-carbonate mines of the Consolidated Kansas City Smelting and Refining Company, in the Carmim mountains, near Sierra Mojada, state of Coahuila. As soon as completed, they will commence to ship ore, of which they have a large body. The company has about 200 claims in this vicinity, of which the Camaquense, Garaposa and Puerto Rico are the most important, and are said to contain ore even more extensive than those of the Sierra Mojada.

Capitalists will work the rich deposits of petroleum that exist in Tabasco.

It is said that Gen. Aureliano Reviera, of the Mexican army, has discovered aluminum clay in the republic of Mexico. It is now being assayed. If the assay turns out well, the aluminum will be made into cartridges for the Mexican army.

New winding machinery and a steam hoist have been purchased in England for La Blanca Mining Company of Pachuca.

The new mill of the National Mexican Mining and Development Company, at El Plomo, in the Altar district, So., began operations last month. It has a daily capacity of 30 tons of ore.—*Modern Mexico.*

#### NEW MEXICO.

Col. J. Beresford Gregory was in Lordsburg from Gold Hill Tuesday, Nov. 3d. The Colonel's mining interests are now in a most prosperous condition. He has under pay some twenty men engaged in mining, transporting and reducing ore, and will in the future make weekly bullion shipments.

The probabilities are that Elizabethtown will have a smelter with a capacity of fifty tons per day, before the winter is over.

J. H. Howe is much elated over his Lina-May prospect at La Belle. The vein uncovered last week is widening and showing a firmer and more perfect formation and, best of all, the gentleman was exhibiting quartz liberally specked with gold.

Scurlock and his force are pushing work on the new strike in Gold gulch near La Belle. It is now timbered to a depth of 15 feet. Width of vein remains about  $3\frac{1}{2}$  feet, and the appearance of the rock improves, bearing increased quantities of free gold. The oxidized sections of the matter return very rich pannings.

The Milagros Mining company of Hell canyon, near Albuquerque, received the machinery for their new mill November 6th.

The force on the American mine near White Oaks has been about doubled recently.

Among the works in progress and to be pushed along at Hopewell, in Rio Arriba county, are the big tunnels on the Good Hope, Red Jacket, Mineral Point, and Little Alice, the Iron Mountain tunnel, Bare Mountain tunnel, the Pauline tunnel, the Sweeney and Ball tunnel, the Kansas City & Memphis Railroad Men's tunnel, the Patterson tunnel, the Duluth Company's tunnel, a deep shaft by Miller and Thomas, continued exploration on the Freeport, Cinnabar, Little Mary and O'Leary's Hidden Treasure, work on the Shaw and Seward contract property, development on several claims owned by the Duluth company, besides work by numerous other outfits.

(Extracts from Silver City Enterprise.)

#### PINOS ALTOS.

Spiller and McLean have 20 men at work on the Pacific Gold Company's claim on the Pacific vein. The mill near Silver City was shut down for a short time for repairs, but is now running 10 stamps again.

The Golden Giant mine and mill are running full time. Forty-five men are employed. The drifts on the 250 foot level are in 500 feet

each way, north and south from the shaft. On the 350 foot level, the drifts have attained a length of about 350 feet each north and south. Stopes are being worked on the 250 and 350 foot levels. The old levels at 150 feet will be reopened ere long. Sinking the shaft from the 400 foot depth has been resumed and is progressing at the rate of about a foot per day.

#### CENTRAL.

The Bayard Milling and Smelting Company has eight men employed, putting the property in shape for more extensive development. The water encountered in this mine is found above the 100 foot level. In the bottom of the shaft a good body of ore is in sight, sinking has been resumed and new ground opened up. While considerable development work is necessary to expose and explore the ore bodies now known to be in the mine, still it is not as if the ore bodies had to be discovered. The ore is of such high grade that it will probably pay the greater part of the cost of development work, and it will pay a handsome profit when stopes are opened.

#### GOLD HILL.

Work was suspended upon the Western Belle, Golden Belt and Bobtail mines. The mill was being repaired and improved throughout, and is now in condition to commence crushing ore in a short time.

#### BALD MOUNTAIN.

Crawford and Woodward are working six men on the Big Casino. A big shipment of ore was made to the Silver City Reduction Works last week.

James Delaney is working two men on the extension of the Big Casino and is getting out pay ore.

#### MOGOLLON.

Good news comes from the Confidence mine. It has been decided to increase the force of miners and commence breaking ore from the stopes, upon which the mill will be started within a short time.

#### SILVER CITY.

The Silver City Reduction Works are running full blast. A carload of copper matte, rich in gold and silver, was shipped last month and another shipment is now ready.

W. H. Newcomb is shipping two cars of iron ore per day to the El Paso smelter.

#### Hillsboro Mines Output.

Output of Hillsboro gold mines for the week ending Thursday, Nov. 5th, 1896, as reported for the *Advocate*:

	Tons.
Butler .....	30
Richmond.....	85
Happy Jack.....	20
Snake Group.....	95
Opportunity.....	35
Sherman.....	15
Prosper.....	20
Eighty-five.....	30
Percha (silver-lead).....	20
Total.....	350

Total output since Jan. 1, 1896, — 20,725.

H. Bramlett, U. G. Cox, A. Johnson and D. Lastner, who have been prospecting at Hell and North canons last week, struck a large body of free milling gold ore, that assayed 115 ounces of gold to the ton. Gold is visible to the naked eye in some of the specimens.

Superintendent J. M. Bennett has reached 195 feet in the Red Jacket tunnel, leaving about 100 feet to tap the inundated main shaft. He has cut several seams of very rich ore in the work. When rid of the water, the main ore chute will be tapped successfully.

The Hall tunnel, on the Good Hope mine, is now in 185 feet, and a rich body of ore on the contract may be encountered any day.

R. M. Tucker will in the early spring be prepared to drive a tunnel to intercept the ore bodies in the Vanderbilt and adjoining properties. Choice ore from the Vanderbilt has run as high as \$2,800.

The Raton mining and milling company, at Raton, Colfax county, received a three-ounce gold button, the result of a mill run of four tons of ore taken from the development shaft of the Mountain Witch, which is located on the Ute Creek side of Baldy.

The Colonial Mining Company, of Mogollon, Grant county, demonstrated its generous and progressive spirit by putting up \$200, spot cash, to aid in building the new road from Mogollon to Silver City, via the Confidence mine, has been completed.

It was reported on the streets of Las Vegas that J. D. Hodkin had found \$40 gold ore, a few miles west of that town.

Mrs. Col. Dissinger has bought a half-interest in the Yellow Copper mine from W. H. Wayland. The property is situated on the quartzite bluff, opposite the Hillsboro Hot Springs and promises to develop into a bonanza, the copper ore already running quite heavy in gold and silver.

Several carloads of ore have been shipped from Las Cruces in the last few weeks. It all came from the Bennett-Stephenson mine.

M. C. Weaver is having his ore from the Tres Hermanos district hauled in and stored in Deming, to await the rise in silver.

#### UTAH.

##### State Line District.

A few strikes have been made during the past week: Joseph Delmar, from near Deer Dodge, brought in some rock from a new find that assayed \$977 in gold, and 47 ounces in silver, and several prospectors have turned their attention in that direction. This is the territory where A. G. Campbell, Dan Ross and others are interested.

Zillig and Hedges have opened up a very promising contact in the Indian Peak range, which will be developed with a force of men in the near future.

Negotiations are in progress to bond the Amazon mine to Mr. Sylvester of Line City, the consideration being \$6,000. This is a very promising vein on Mineral Hill, owned by Messrs. McBurney, McDonald, Higbee and Houchen. Mr. Sylvester is to be congratulated on his acquisition.

A good many prospectors are erecting substantial cabins and laying in a stock of provisions for the winter, and stone mansions in either gulch will be very plentiful.—*Iron County Record*.

A strike is reported in the Keystone, in East Bingham, where Elmer Hill has been developing ground. The claim has been extensively prospected. Drifts have been run,

upraises made and winzes sunk without success. Recently it was decided to continue the driving of the tunnel, and at a point 245 feet from its mouth, four feet of ore have been uncovered that shows as much as 53 per cent lead and nine ounces of silver. The discovery has created much excitement among those who own claims in the locality, and a large amount of new work is relied on.

There has been a great deal of prospecting on the east side of the range upon which the Keystone is located, but results have generally been indifferent, and the disclosure by Mr. Hill will be greeted with much satisfaction by mining men generally.

Work on the Antelope at Bingham will very likely be resumed in a few days. The property has already shown up a fine body of ore, and as soon as a hoisting plant is erected should be among the steady producers.—*Tribune.*

(*Salt Lake Herald.*)

C. H. Schue of the La Cigale mine, in the western foothills, in Camp Floyd district, left for the mine, Nov. 7th, for the purpose of pushing work in the development of this promising property, in which he expects to disclose an immense body of pay gold ore within the next two months, if not sooner. In the La Cigale, Mr. Schue is now running a drift from the bottom of a shaft, and he hopes to make connection with the gold belt within about 60 feet more. Already Mr. Schue is getting assays of \$4 in gold to the ton, and he is of the opinion that it cannot be long now before good values are obtained, and he is confident that in time some of the greatest mines of the district will be opened up in that locality. The Omaha, he states, is the making of a great mine, as the vein, as exposed on the surface, which is five to six feet thick, carries average values of \$7 in gold to the ton, while picked samples go as high as \$150, and even higher. In developing this property, the company sunk through the ledge, instead of following it on its dip.

The Dipper Mining Company made a shipment of five tons of ore last week from its Little Cottonwood mine, that carried gold values of about \$60 and an ounce in silver to the ton. The company will push work in the development of the mine all winter.

Nov. 6th, the Utah & Montana Machinery Company shipped a 50-horse power flat friction engine to the DeLamar mines at Mercur. This makes the third engine of this style that the Utah & Montana has sold to DeLamar for his Mercur mines, besides another one of a different make.

From a gentleman who came in from Mercur, Nov. 6th, it is learned that the Golden Gate Company has doubled the force at the mine, and that at the east shaft the gallows frame is being made stronger and higher. From all the indications, the Golden Gate Company is getting ready to begin work on a larger scale.

A carload of ore from the Buckeye mine, near Silver City, Tintic, was received last week that assayed 35.2 per cent lead, 32.8 ounces silver, and \$4.20 in gold to the ton. The Buckeye is now sending in a carload of good ore a week, and the *Herald* is informed that the mine is in excellent shape for future production.

The Fortuna mine, Arizona, is said to have turned out a gold bar, worth \$76,000, for a thirty days' run.

#### TINTIC.

##### Working the Anandale Sale of the Ivy Lode—Jottings.

The Buckeye shipped last week a carload lot of the highest grade ore ever taken out of the mine.

Messrs. Yundt and Oglesby, who have a lease on the Anandale, are sinking a shaft about 300 yards north of the shaft of the Apex. They have four men at work.

E. N. Jenkins has purchased the Ivy Lode from T. C. and T. H. Hanford and Fred Nelson. The ground joins the Silver Chain and is on the line of the great Sioux-Ajax tunnel.

The Bullion-Beck mill has been shut down since Nov. 1, but we are advised will start up again soon. The men will be put on an eight hours' shift at slightly reduced pay..

The run of Ajax ore through the Sioux mill has been completed, and is reported as giving good satisfaction. The North Star is now preparing to make a 3,000-ton run through the same mill, to test the process on their ores, and it is expected that if satisfactory, that the erection of a similar mill on the North Star will immediately follow.

The case of Joseph Biddlecome and John J. Pope vs. the Hot Stuff Mining Company, involving the title to the old Mammoth, of the North claim in North Tintic, has been compromised and dismissed, and we are advised that the effect will be greatly increased activity in the development of the latter company's valuable North Tintic property.

Shipments for the district for the week are as follows: From the Bullion-Beck mine, 20 carloads ore; from the Centennial-Eureka, 7 carloads ore; from the Humbug, 5 carloads ore; from the Ajax, 21 carloads ore; from the Sioux mine, 4 carloads ore; from the Sioux mill, 7 carloads concentrates; from the Mammoth mill, 8 carloads concentrates; from the Buckeye, 1 carload ore; from the Swansea, 7 carloads ore; from the Dragon Iron mine, 2 carloads ore daily.

#### Leased the Highland Chief.

(*Salt Lake Herald.*)

The increased activity of late in the mines of Alta, in little Cottonwood canyon, has created a special demand for leases and bonds on the old producers of this once-famous camp, and the *Herald* is informed that a short time ago Henry L. Dodds of this city made arrangements whereby he secured a lease for 18 months on the Highland Chief mine, at Alta, just above the Emma mine. The Highland Chief is owned by W. W. Chisholm of this city and Lockhart & Frew of Pittsburg, and in the development of this property large bodies of oxidized ore have been exposed, carrying values of 20 to 40 per cent lead and 30 to 60 ounces in silver to the ton. Mr. Dodds has been cleaning out the old workings of the mine, and it is his intention to work the property all winter.

Mr. Dodds has also secured a lease on the Stoker mine in the same locality, which is owned by the Stoker Mining Company, of which Mr. Chisholm is the general manager. The Stoker is a producer of high-grade ore, which is very refractory, and it is for this reason that the property has remained idle for a number of years, as, at the time that Alta was in its most flourishing condition, the smelters did not understand the treatment of base ores as they do now. Under existing circumstances however, it is believed that by

another season the Stoker will make a good record for itself, as this class of ore can now be handled to good advantage.

Leo Grow and his associates who made some promising discoveries last summer nine miles east of Farmington, obtained assays a few days ago from the ore that went 34 per cent lead, 2 ounces in silver and \$6 in gold to the ton. Development work so far has disclosed a fine body of ore on this property almost at the surface, and the showing is so promising that the boys intend to do considerable work on the property this winter.

The latest advices from the Constellation mine, at Park City, is to the effect that the property is looking extremely well, as the workings are now in mineralized ground.

#### MERCUR.

##### Increased Activity at the Golden Gate—Rich Sacramento Ore.

Work is going forward at the Geyser on the addition to the mill. The foundation is in and it will not be long before the building will be under cover. Then it will take but a short time to put in the tanks, as they are on hand all ready to be put together.

The Wonder is now down 490 feet and indications are that pay ore will be encountered in the next ten feet.

The rock now being hoisted is a thirty lime, impregnated with yellow ore in the shaft, but assays have not yet been received thereon.

The rumors of rich ore in the Omaha property prove to be well founded. The strike is on the croppings and the ore runs from a few dollars up to \$147 per ton. Of course such a showing is bound to cause great activity in the western foothills and many properties there will now be developed. Since the strike W. S. Fugate has secured a bond running one month on the property and will develop the find. The amount of the bond is not stated.

A fine breast of ore is now being stopped at the Sacramento, which averages from \$22 to \$25 per ton. Mercur is evolving from what is known as a low grade camp into a producer of rich ore. The new strike is almost in the center of the company's workings, which increases its value greatly to that company. The company is now treating from 100 to 110 tons daily and as a great deal of it comes from this new discovery the stockholders will soon be pocketing fat rakeoffs.

Burfinde's process of reducing ores by cyanides to gold bullion having proved so successful and economical, it is probable that hereafter he will treat the product of the Marion, Geyser, Sacramento, the Dexter (a Nevada property) and most likely the Mercur and Sunshine. The process saves boxing, expressage and a number of other items of expense and the producer gets returns on a basis of assays made right in the camp and not according to the lowest assay made on the lot at the eastern refinery whereby as much as \$1,500 has been lost in the past on one shipment.

##### Rasband Bros. and John Diem Strike Ore in American Fork.

The receipts at the sampler at Park City for the week ending November 6th remained about as usual. Thursday's receipts were: Silver King, 49 tons; Daly-West, 29 tons; creek jiggings, 14 tons. Superintendent Rookledge does not anticipate any immediate change in receipts on account of McKinley's election.

Rasband Bros. & John Diem have concluded not to start the tunnel on their ground in American Fork canyon. Last week they encountered a very promising vein of lead-silver

ore, assays of which made from blossom rock gave returns of 33 1-3 per cent lead, 5 ounces of silver and a trace of gold. It was thought that with a very short tunnel, not over 50 feet, the ledge, if it continues down, could be cut at a depth of nearly 300 feet. They do not think the ore would pay at the present price of silver, however.

The ore from the Vallejo is showing up to the satisfaction of the shareholders. A recent assay gives 406 ounces silver, 17 1-10 per cent copper and \$3.10 in gold to the ton. The big tunnel has reached 60 feet and will cut the vein 500 or 600 feet deeper than the present works.

## GENERAL NEWS

More than 4,000 stamps are at present in operation in California.

Over five millions of gold was produced by Arizona during the fiscal year ending June 20, 1895.

The aggregate capital of the 526 Australian mining companies floated in London in 1895 was £53,796,394.

A shipment of 150 tons of copper from the Ducktown (Tenn.) mines has been made to Swansea, Wales.

An American exploring syndicate is developing some newly acquired mining properties in Ecuador, South America.

The State Ore Sampling Works, of Denver, gave its check last week for \$50,428.95, for a car of ore from the De Lamar district of Idaho.

The gold production of the Rand region, South Africa, has increased from 729,237 ounces in 1891 to 2,277,635 ounces in 1895.

The July output of the Anaconda mine, Montana, was 9,900,000 pounds of copper, which is nearly two million pounds more than the Calumet and Hecla in Michigan.

The development of quartz mines in the old Idaho placer camp of Florence has taken on a very promising outlook, and a good permanent quartz camp is expected to result.

It is stated, on very good authority that the yield of the Jumper mine, seven miles from Sonora, Tuolumne county, California, for the month of September was \$160,000.

The Hendra group of gold mines, Dun Glen, Nev., had been sold for 20,000, and the new owners are putting up a ten-stamp mill. Several thousand tons of free-milling \$9 ore are in sight.

At the rock-drilling contest at the Spokane fair, Freethey and Davey of Butte, Montana, held their title to the championship by raising their own record from 42 inches to 49 1/8 inches. It was an exciting affair, for good work was done by all the contestants. O'Donald and Spaulding of Cœur d'Alene began by driving the drill down 40 3/8 inches. Freethey and Davey followed, making a record of 49 5/8 inches. After the Butte team had finished, Ross and Smith, the Rossland team, drove the drill in 44 inches, breaking the previous world's record 2 inches.

The Utica mine, Angels, Calaveras county, California, in the first two weeks' run of last month cleaned up a very much larger amount of gold than has been the case in a long time. This mine is claimed to be the heaviest gold producer, not only in California, but in the United States.

Bulletin, No. 10, of the California State Mining Bureau, was kindly sent to this office by J. J. Crawford, state mineralogist. It is a bibliography, relating to the geology, paleontology, and mineral resources of California, by Anthony W. Vogdes. Any citizen of California may obtain a copy free, by sending five cents (for postage), with their application to the California State Mining Bureau, No. 24 Fourth street, San Francisco.

A contract for twenty-five air compressors and twenty-five air receivers, of medium and small sizes, has been closed by the Clayton Air Compressor Works, Havemeyer Building, New York, with one company, delivery of the entire order to be made within six months from date. They also report sales of five air compressors, of standard pattern during the first week in November, and the indications point to a decided revival of trade in air compressors.

A mine near Norris, Montana, is made up of a formation that so far, is something unusual in that section of the mining world. The pay streak is about two feet in width and is a good grade of manganese containing gold visible to the eye. In fact, it sticks out all over the ore. This is the first instance so far recorded in the state, so old miners say, that they have witnessed such a characteristic. The property samples well, and no doubt Butte parties will take hold of it.—*Western Mining World*.

Kamloops, British Columbia, is liable to become the center of considerable mining excitement. Like the Chicago fire, the mining boom in Kamloops had a strange beginning, and was started by a trifling casualty. Two bulls were combatting on a foothill; a farmer going by in a wagon recognized one of the beasts as his property and separated them. The struggle had been a severe one, and the surface was overturned in several places. The farmer noticed a piece of rock of a peculiar color and had it assayed on his first visit to town, and was amazed when his certificate showed a value of \$45 per ton in copper. Work was done on the claim, and it shows up a well-defined vein of copper ore. Now, the entire country is staked out.

## HOME FOR PIONEERS.

The Governor Suggests Such for Superannuated Miners of Arizona.

Extract from Governor Franklin's report. In his article on statehood he says:

"Upon the admission of Arizona as a state, the disabled and infirm miners should be especially provided for. They paved the way for civilization, they endured all the privations, toils and dangers of a frontier life, and did more to bring Arizona into prominence than any other class of men. They were the pioneers, and I hope when Arizona is admitted as a state that a liberal appropriation of public lands will be made for the establishment of an hospital for those who are incapacitated from earning a livelihood. I urgently recommend that a grant of 100,000 acres of the public lands be made for this purpose."

California has a mining law which requires claim owners within forty days after filing their annual assessment work, to file with the county recorder an affidavit describing the work performed, and refer to the record of location. A failure to comply with the law leaves the mine open to re-location.

The world's gold yield for '95 is estimated as follows: United States, \$46,800,000; South America, \$43,000,000; Australia, \$42,800,000; Russia, \$34,000,000; other countries, \$36,400,000. Total, \$203,000,000. It is thought that for '96 this country will produce \$50,000,000, and that the other countries will show a proportional increase. The world's production of silver in '95 was \$226,000,000 (coining value) divided as follows: United States, \$72,000,000; Mexico, \$64,500,000; Bolivia, \$27,000,000; Australia, \$26,000,000; other countries, \$36,500,000.

Copy.

CRAFTON, Cal., Nov. 16, '95.  
MR. WILLIAM GREGORY,

Redlands, Cal.

DEAR SIR:—Replying to your letter of inquiry, asking how we like the White & Middleton gasoline engine? In reply will state that it is in every way perfectly satisfactory, costing about one third less for fuel and one man's salary, as it requires no one to watch it. Since it has been in use at our quartz mill, the stamps have not stopped once on the engine's account, and we have not been out anything for repairs, while the engine it replaced was constantly out of repair. Yours truly, DAVID MEACHAM.

We are in receipt of *The Industrial Reporter*, vol. XIII, Nos. 3 and 4. It is an illustrated journal devoted to western progress and development, published in Denver Colorado, with James F. Callbreath, Jr., as general manager. It is for the engineering, mining, mechanical, electrical, irrigation and hardware interests of the great west, and was established in 1889. It is very handsomely printed on fine book paper and contains nearly seventy elegant half-tones and other illustrations. There are seventy-two pages, with quite a few devoted to the smelting industry of Colorado. On the outside front cover is an illustration of a gold nugget found in Summit county (Colo.) weighing 26 ounces and valued at about \$400.

Dr. F. M. Endlich, the well-known mine expert, and Evan Davis, identified with the mining interests in Colorado for a number of years, have formed a partnership for the prosecution of their profession. Besides the ordinary technical work incident thereto, such as examination of mines, designing and erection of mills, smelters, concentration works, etc., they have made arrangements for the purchase and sale of first class mining properties. Their facilities in this respect are exceptionally good, and as they decline to handle any but really meritorious properties, there can be but one result in this branch of their work.

In addition to purchasing and placing mines of recognized development and value, they will be prepared to assist owners of satisfactory "prospects" in developing and marketing the same, under suitable conditions. An establishment of this kind fills a long-felt want in this section of country, and the reputation of the gentlemen composing the new firm is an entirely sufficient guarantee as to their ultimate success and the satisfaction of their clients.

We call attention to the advertisement in this issue of Messrs. White, Rogers & Co., constructing engineers and millwrights, 306 Pine street, San Francisco, whose long experience in furnishing and erecting stamp mills, hoisting and pumping mills, wet or dry concentrating plants, also smelters for copper or silver, and, in fact, every class of machinery for the reduction or treatment of the precious metals, should recommend them to the attention of those who contemplate the erection of any class of mining machinery. The members of this firm have been constantly engaged in this business for the past 36 years, and the experience gained in almost every mining district, from Alaska to South America, give them advantages in practical knowledge not possessed by any other firm in the United States. This experience enables them to provide practical and successful works—thereby saving costly experiments, and many times serious loss, to mine owners or those intending to work mines with the idea of prospecting for future operations.

## PERSONAL-NEWS ITEMS

Col. J. B. Gregory was in Lordsburg, N. M., from Gold Hill, Tuesday, Nov. 3d. The Colonel's mining interests are now in a most prosperous condition.

E. L. Giroux of Portland, Ore., brother of Supt. J. L. Giroux of the United Verde, both of whom are in Tucson, Arizona, attending the Jordon-Duke mining suit, will leave for Paris, France, immediately on the conclusion of the suit.

Hon. James Fleming, mine inspector for the territory of New Mexico, and Mayor of Silver City, N. M., passed through Albuquerque, going north, Nov. 7th.

Ed. Torrence, of Randsburg, was in Bakersfield, Cal., November 4th, from the miner on the Desert.

Geo. A. Green, of Metcalf, managers of the Arizona Copper Company's store at that place, arrived in Solomonville, Arizona, Wednesday, November 4th.

Prof. T. H. Jenks, son of William Jenks, manager of the Washington mine at Bland, arrived in Albuquerque, N. M., November 8th, from California. He is manager of the Gold Mountain mine in San Bernardino county, Cal.

C. A. Randall was in Prescott, Arizona, the fore part of this month, from his Big Bug mining camp.

D. E. Murphy, of Milwaukee, Wis., was in Mexico last month. Mr. Murphy is the owner of the Cochnera mining property at Ramos, N. L.

J. D. May left Albuquerque, N. M., for North Canyon, Nov. 5th, to look after his interest in the Little Pittsburg mine.

Adin Alexander, a capitalist who owns some mining property in Oregon, has just left Los Angeles for his property.

Roy F. Wrigley, a prominent Colorado mining operator, is at Hillsboro, N. M., in the interest of a Denver syndicate to examine the mines of that district.

W. C. Reed came into Bakersfield, Kern Co., Cal., from the mines on the Desert near Randsburg. Mr. Reed reports everything booming in Randsburg.

R. W. Eames, of Lawrence, Kan., a mining expert who has been making a test of the ore in the Cedros Island mine, just off the coast of Lower California, in the interest of Eastern capitalists, was in Chicago last month making his report.

W. L. Ogle came into La Belle, N. M., from Trinidad, November 3d, and remained about a week, looking after his mining interest near La Belle.

E. S. Richard, who is interested in mining in this State, left Los Angeles, Cal., for the State Range in San Bernardino Co., November 13th.

W. B. and F. R. Mendenhall, who have been placer mining at Grand Canyon, about ten miles up the river from the Cameron Copper mine, arrived Monday night, November 2d, in Flagstaff, Ariz.

L. B. Porter, who is interested in some mining property on Brakine Creek, near Havilah, Kern Co., left Los Angeles, Cal., for the State Range, November 12th.

R. S. Philpot, of Bland, N. M., was a caller at the Journal office November 12th. Mr. Philpot is interested in the Red Cloud mine in the Cochiti district, New Mexico.

John Hart got into Bakersfield from Randsburg, Cal., the 4th inst. He met a great many teams on the way to the Desert mines.

Prof. Ricketts, a mining expert from Denver, Col., was in Bisbee, Arizona, the first of the month. Mr. Ricketts has done quite a little expert work for the Copper Queen at one time and another, but we do not know whether his present trip is in their interest or not.

P. J. Stone, of Athens, Pa., is in Hematite, N. M., looking after interests connected with the Athens Mining and Milling Company.

E. B. Gage, of the Congress Gold Company, arrived in Phoenix, Arizona, November 7th, for a short visit.

Bob Thompson was in Silver City from White Signal, N. M., for ore sacks, Nov. 5th. He has about ten tons of high-grade ore which he will deliver to the Silver City Reduction Works in a short time.

James Griffin left Phoenix, Arizona, November 8th, for the Yuma Copper Company's camp. He is expected back in Phoenix very shortly.

Prof. Edwin Walters, who is well known in the vicinity of Cerrillos, N. M., having formerly been there with the Santa Fe Placer Company, arrived in that place from Rio Arriba and Taos counties, where he has been looking over some properties for Eastern people.

H. L. Scott, familiarly known among mining men as "Hank," is in Phoenix, Arizona, from Fool's Gulch.

T. J. Davis returned to Bakersfield from Randsburg, Nov. 5th, and reports a great many teams on the way to Randsburg.

J. A. Cribb is in Solomonville, Arizona, from Clifton, where he has been in the service of the Arizona Copper Company for a number of years.

E. S. Jones, manager of the Congress Gold Company's store at Congress, Arizona, is in Phoenix.

Forest Farinum has been placed in charge of the Donebarger and Pennsylvania mine in Yuba Co., Cal.

H. K. Wheeler, who has for some time been employed in the capacity of surveyor for the De La Mar mine, Nevada, has gone to Virginia City, Nev., where he will remain for a time.

Frank Obermuller has left Phoenix, Arizona, for the Yuma Copper Company's camp, and will remain about a week.

Geo. Brown, of Pamosa, was in Bakersfield, Cal., from the Desert mines the 4th inst., where he has located some good claims. He thinks that is about the best mining country he has seen, and predicts some great finds out there this winter.

Wm. H. McQuane was at La Belle, from Red River, N. M. He has some fine prospects in the Red River district.

Sheriff Roshborough, of Kingman, Arizona, has gone to his copper property near Bill Williams Fork. He has a sale on foot.

William Sheets and Gus Larson, who have been on an extended prospecting expedition in the mountains, have lately returned to San Marcus.

Arthur Christian of Hematite, has gone to La Belle, N. M., to attend to business in connection with the Climax Mining and Milling Company.

Col. A. O. Brodie left Prescott, Arizona, for Phoenix, November 5th, to purchase machinery to be placed at the Walnut Grove property.

Judge Conklin is back in Bakersfield from the Desert mines.

J. N. Yocom returned to Phoenix, Arizona, Nov. 3d from a tour of the east where he has been all summer. He is ready to organize another mining company and develop the latent resources of Arizona Territory.

C. H. Belcher, mill man of the Garlock stamp mill at Garlock, near Randsburg, Kern Co., Cal., was a caller at the Journal office November 14th.

Mr. S. S. Willes of Los Angeles, who has just returned from his mines, the "El Cajon," and "Amarillas," in Sonora, Mexico, which he has recently disposed of to a Pennsylvania syndicate, was a visitor at the Journal office the 14th inst.

Adolf Lassont, who has been attending to the Socorro business during his father's illness, left for El Paso, where he has employment at the El Paso Smelting Works.

## OBITUARY

Capt. Adams, superintendent of the Aravaipa Mining Company, died in Phoenix last Tuesday morning, November 3d. Capt. Adams was an old time Arizonian, having lived in the Territory many years. He was the organizer of the Aravaipa Mining Company, in Aravaipa canyon, Maricopa county, of which he was still superintendent at the time of his death.

Joseph August, better known as Bodie Joe, died in Baker City, Oregon, the first of the month. He was an old timer on the Comstock in Nevada, where he ran a pack train in the early days.

Thomas P. Gillespie, superintendent of the Sterling mine in Vanderbilt district, San Bernardino Co., California, was shot from ambush and instantly killed the latter part of October, while driving along the road near Manvel.

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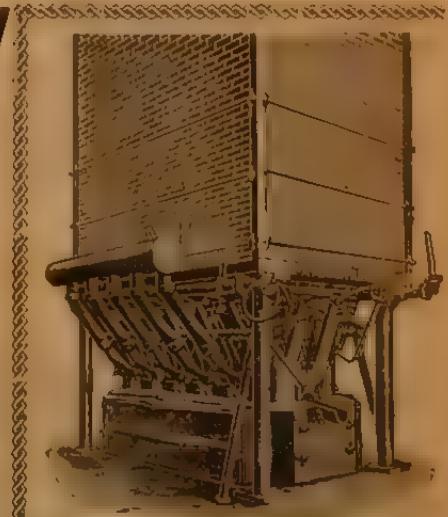
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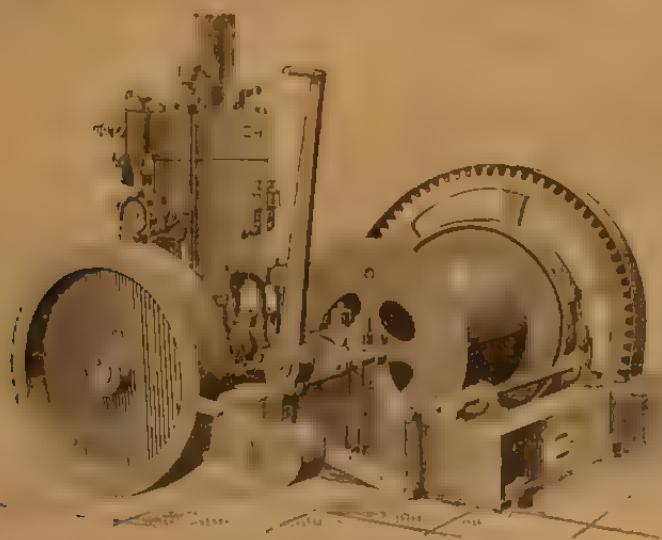
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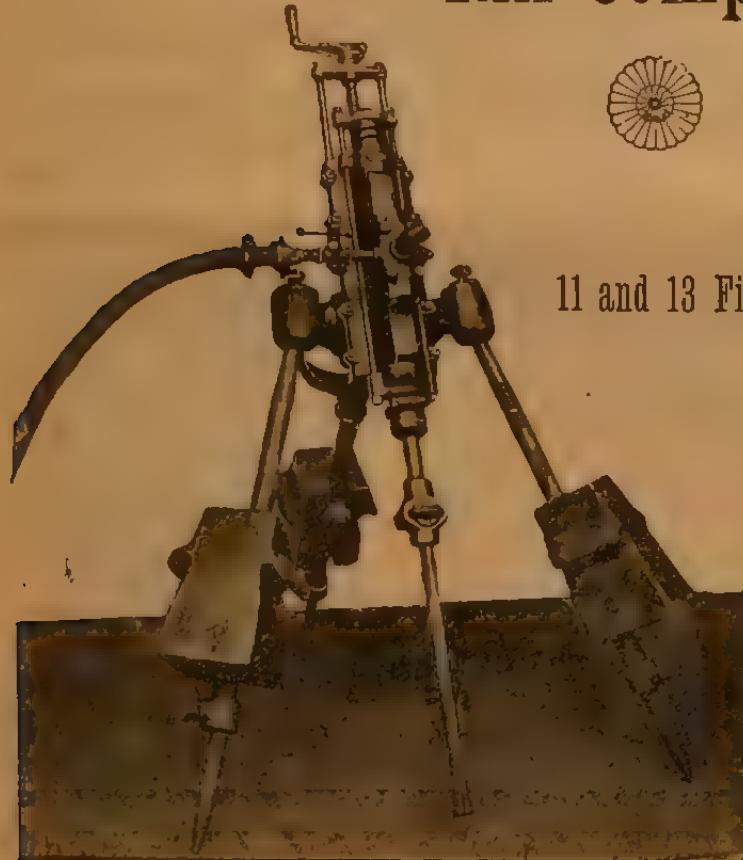
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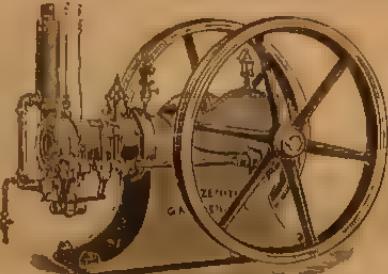


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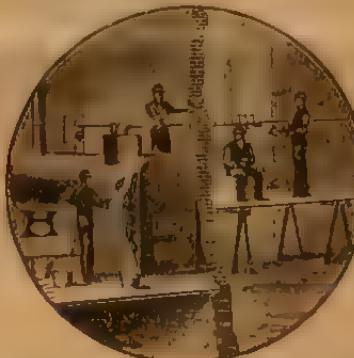
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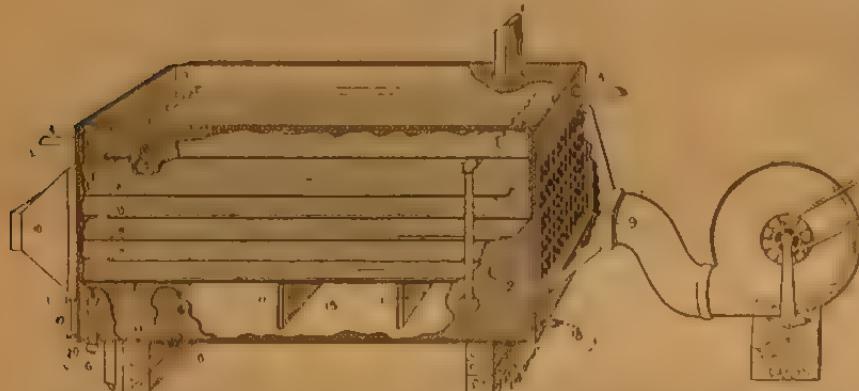
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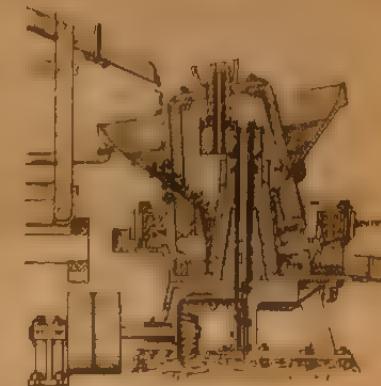
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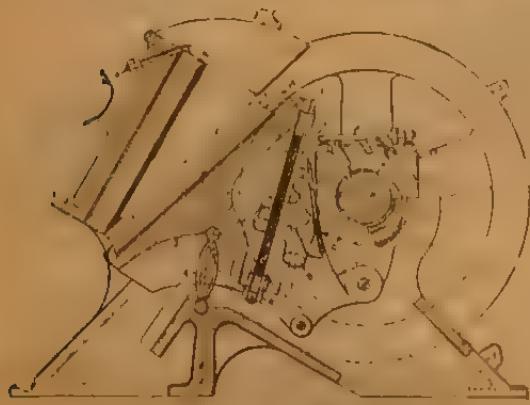
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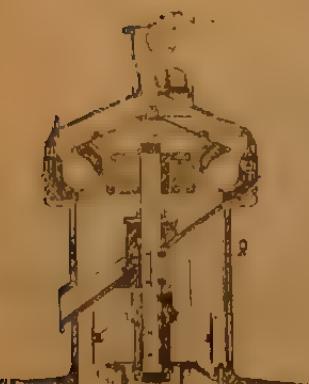


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Quartz Screens  
A specialty. Round, slot or buried slot holes  
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**Am. Zinc-Lead Smelter**  
CANON CITY, COLORADO.**NEW MEXICO AND ARIZONA SMELTER**  
Hanover, Grant Co., N. M.

Will buy all kinds of ores; specialty made of copper ores and those containing zinc. Low grade refractory ores desired. Write for prices to either Smelter.

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Forged High Grade Steel  
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Made by use of Special Appliances. Patented Aug. 16th, 1892.

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**PUGET SOUND PINE AND REDWOOD LUMBER**Delivered at any R.R. point in New Mexico, Arizona or California  
FIRST-CLASS MATERIAL

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Highest cash price for old gold and silver, placer and retort gold; we will make returns in Southern California, Arizona, New Mexico from 4 to 6 days quicker than from any other point.

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BELTING.

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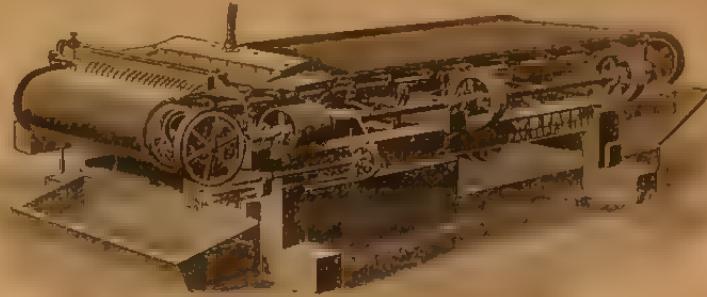
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Over 4,200 in Actual Use

Manufactured under Patents of April 27, 1880; Sept. 18, 1883; July 24, 1883; and March 31, 1891.



It can be safely stated, without going into a description of several new and untried concentrators that have lately come into the market, that where sulphurates are of such value as to make cleaning necessary, the True Vanner is always used. It is the only endless belt concentrator in the market that can be relied on to handle all classes of ores, and give universal satisfaction. (In all competition of concentrators the True Vanner is taken as the Standard machine of the world, and all comparisons made by it. There have been over 4200 of these machines sold, 1700 having been sold on the Pacific Coast alone.) They are in use in every part of the world where mining is carried on, and in all cases they are giving perfect satisfaction. From time to time valuable and important improvements have been made in this machine to increase its capacity and durability, and particular attention is called to the Patent Lip Flange for the rubber belt, which does away with nearly all the strain and cracking, as in the old style of flange, making the life of belt more than double that of other style belts in the market. The lip of flange bends outward in going over the large end rolls, thereby distributing the strain in the solid rubber, and bringing virtually no strain either at the edge or at the base of flange, as is the case in all belts with a raised edge.

Price of 4-foot wide Plain Belt True Vanner...	\$500 f. o. b.
Improved Belt True Vanner...	400 f. o. b.
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JAS. S. BROWNELL, Western Agent TRUE VANNING MACHINE CO.  
Successor to ADAMS & CARTER  
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Assaying of Ores, \$25; Bullion and Chlorination Assay, \$25; Blowpipe Assay \$10. Full Course of Assaying, \$50. Established 1864.

Send for Circular

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MANUFACTURERS OF  
**STAMP MILLS**   
**CONCENTRATORS**  
*And all Classes of*  
**MINING MACHINERY**

Wire Rope Tramways with Automatic Loading Apparatus permitting the ore bins to be permanently open.

Specialty made of the Improved, Iron Frame Self-Contained Stamp Mill, the greatest success of the day in reduction of ore to pulp. A great boon to mill builders in countries where timber is plenty and therefore a greater boon to those who have no timber from which to draw the huge pieces needed in old style mills. We claim for this mill:

- 1st. It is no longer a new thing, but well tried and its durability proven.
- 2d. Cheaper than the Wooden Frame Mill when ready to run.
- 3d. Saves a great amount of delay in erection and it can be set up in as short a time as a self contained engine.
- 4th. Saves much space.

We call the attention of Prospectors to our Self Contained Two Stamp Mill.

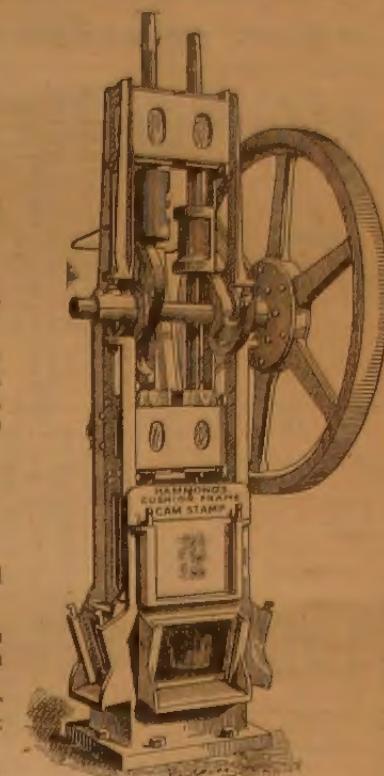
We have inaugurated a system of amalgamation and concentration which renders both much more satisfactory and cheapens the cost of concentration by a great saving in the repair to the complicated machinery now used.

Parties intending erecting mining plants would do well to investigate our mills. We build any mill desired and will deliver F. O. B. Steamer or cars at San Francisco, California.

We are prepared to furnish parties desiring small plants in localities where fuel is extremely expensive, with mills coupled up and ready to run with gasoline engines, guaranteeing the efficiency of both engine and mill.

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69 First Street,  
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## THE PACIFIC AMALGAMATOR

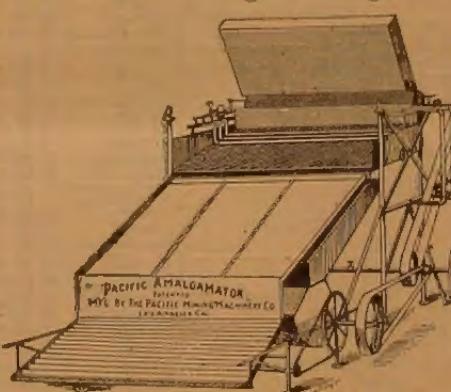
This machine is guaranteed to do the work represented and will save coarse or fine gold equally well. The weight of the standard size for mill is 600 lbs. and for placer use 1000 lbs. The machine can be shipped in sections, no piece weighing over 100 lbs., this makes it by far the cheapest for use in mountainous districts where it is necessary to use pack animals for transportation. The standard size machine has seventy square feet of amalgamating surface constructed in such a manner as to give the greatest contact without scouring the plates. This machine can be opened and the process of amalgamation be seen at any time while in operation.

Send for further particulars to

### The Pacific Mining Machinery Company

703 S. MAIN ST., LOS ANGELES, CAL.

ALSO, 127 FIRST ST., SAN FRANCISCO, CAL.



E. E. BURLINGAME'S  
ASSAY OFFICE <sup>a</sup> <sub>b</sub> <sup>c</sup> <sub>d</sub> <sup>e</sup> <sub>f</sub> <sup>g</sup> <sub>h</sub> <sup>i</sup> <sub>j</sub> <sup>k</sup> <sub>l</sub> <sup>m</sup> <sub>n</sub> <sup>o</sup> <sub>p</sub> <sup>q</sup> <sub>r</sub> <sup>s</sup> <sub>t</sub> <sup>u</sup> <sub>v</sub> <sup>w</sup> <sub>x</sub> <sup>y</sup> <sub>z</sub> <sup>Chemical</sup>  
Established in Colorado, 1866. Samples by mail or express will receive prompt and careful attention. Gold and Silver Bullion refined, melted and assayed, or purchased.

Address 1738 and 1738 Lawrence St., Denver, Col.

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From Points in Mexico, New Mexico, Texas and Arizona, to El Paso, Pueblo, Denver and Kansas City.

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FROM	TO	Car Loads, in dollars and cents per ton of 2,000 lbs.		
		Ore Concentrates		
		Valuation not to exceed \$50 per ton.	Valuation not to exceed \$100 per ton.	Valuation not to exceed \$300 per ton.
Guaymas...Mex.	El Paso	10.00	11.50	13.50
	Pueblo	13.50	15.00	17.00
	Denver	15.00	16.50	18.50
	Kansas City	15.50	17.00	18.00
Ortiz....."	El Paso	8.50	11.00	13.00
	Pueblo	12.50	14.00	16.00
	Denver	14.00	15.50	17.50
	Kansas City	14.50	16.00	18.00
Torres....."	El Paso	9.00	10.50	12.50
	Pueblo	11.50	13.00	15.00
	Denver	13.00	14.00	16.50
	Kansas City	13.50	17.00	17.00
Hermosillo..."	El Paso	8.50	10.00	12.00
	Pueblo	10.00	11.50	13.50
	Denver	11.50	13.00	15.00
	Kansas City	12.00	13.50	15.50
Pesqueira...."	El Paso	8.00	9.50	11.50
	Pueblo	10.00	11.50	13.50
	Denver	11.50	13.00	15.00
	Kansas City	12.00	13.50	15.00
Querobabi..."	El Paso	7.00	8.50	10.50
Santa Anna..."	Pueblo	10.00	11.50	13.50
	Denver	11.50	13.00	15.00
	Kansas City	11.50	13.00	16.00
Magdalena..."	El Paso	6.50	8.00	10.00
	Pueblo	9.00	11.00	13.00
	Denver	11.00	12.50	14.50
	Kansas City	11.50	13.00	15.00
Imuris....."	El Paso	6.00	7.50	9.50
	Pueblo	8.50	11.00	13.00
	Denver	11.00	12.50	14.50
	Kansas City	11.50	13.00	15.00
Nogales...A.T.	El Paso	6.50	8.50	10.50
	Pueblo	10.00	12.50	15.00
	Denver	12.00	14.00	17.00
	Kansas City	12.50	15.00	18.00
Calabasas..."	El Paso	5.50	6.50	8.50
	Pueblo	8.50	10.00	12.00
	Denver	10.00	11.50	13.50
	Kansas City	10.50	12.00	14.00
Sanfords..."	El Paso	5.50	6.50	8.50
	Pueblo	8.00	9.50	11.50
	Denver	10.00	11.00	13.00
	Kansas City	10.50	11.50	13.50
Crittenden..."	El Paso	4.70	5.70	7.70
	Pueblo	8.00	8.50	11.50
	Denver	9.50	11.00	13.00
	Kansas City	10.00	11.50	13.50
Fairbank..."	El Paso	4.40	4.40	6.50
	Pueblo	8.00	9.50	11.50
	Denver	9.50	11.00	13.00
	Kansas City	10.00	11.50	13.50
Tucson....."	El Paso	4.35	5.70	7.70
	Pueblo	9.00	10.50	12.50
	Denver	10.50	12.00	14.00
	Kansas City	11.00	12.50	14.50
Benson..."	El Paso	8.00	10.00	12.00
	Pueblo	9.50	11.50	13.50
	Denver	10.00	12.00	14.00
	Kansas City	10.50	12.00	14.00
Steins Pass, N.M.	El Paso	8.00	9.50	11.50
	Pueblo	10.00	11.50	13.50
	Denver	11.00	12.50	14.50
	Kansas City	11.50	13.00	15.00
Lordsburg..."	El Paso	7.50	9.00	11.00
	Pueblo	9.00	10.50	12.50
	Denver	10.00	11.50	13.50
	Kansas City	10.50	11.00	13.00
Silver City..."	El Paso	2.50	3.20	4.70
	Pueblo	8.00	8.50	10.50
	Denver	9.50	10.00	11.50
	Kansas City	10.00	10.50	12.00
Hudson..."	El Paso	2.40	3.00	4.50
	Pueblo	6.50	8.00	10.00
	Denver	8.00	9.50	11.50
	Kansas City	8.50	10.00	12.00
Deming..."	El Paso	2.20	2.80	3.80
	Pueblo	6.00	7.50	9.50
	Denver	7.50	8.00	11.00
	Kansas City	8.00	8.50	11.50
Florida and Lake Valley	El Paso	2.00	2.50	3.50
	Pueblo	6.00	7.50	9.50
	Denver	7.50	8.00	11.00
	Kansas City	8.00	8.50	11.50
Nutt....."	El Paso	2.20	2.40	3.40
	Pueblo	6.00	7.00	9.00
	Denver	7.50	8.00	10.50
	Kansas City	8.00	9.00	11.00
El Paso...."	El Paso	8.00	7.50	9.50
	Pueblo	8.00	9.00	11.00
	Denver	8.50	9.50	11.50
	Kansas City	9.00	10.00	12.00
Las Cruces..."	El Paso	1.50	2.00	3.00
	Pueblo	8.00	7.50	9.50
	Denver	7.50	8.00	11.00
	Kansas City	8.00	8.50	11.50
Rincon....."	El Paso	2.00	2.50	3.50
	Pueblo	6.50	7.00	8.00
	Denver	7.00	8.50	10.50
	Kansas City	7.00	8.00	11.00

FROM	TO	Car Loads in dollars and per ton of 2,000 lbs.		
		Ore Concentrator.		
		Valuation not to exceed \$50 per ton.	Valuation not to exceed \$100 per ton.	Valuation not to exceed \$300 per ton.
Engle...N.M.	El Paso	2.20	2.80	3.80
Crocker....."	Pueblo	5.50	7.00	8.50
	Denver	7.00	8.50	10.50
	Kansas City	7.50	9.00	11.00
Lava....."	El Paso	2.20	2.80	3.80
	Pueblo	5.20	6.70	8.70
	Denver	8.70	9.20	11.20
	Kansas City	7.20	8.70	13.80
El Paso, N.M.	El Paso	2.40	3.00	4.50
Carthage....."	Pueblo	5.20	6.70	8.50
	Denver	8.70	9.20	10.80
	Kansas City	7.20	8.70	13.80
San Marcial..."	El Paso	2.60	3.20	4.70
	Pueblo	5.20	6.70	8.50
	Denver	8.70	9.20	10.80
	Kansas City	7.20	8.70	13.80
El Paso, A.T. & S. F. R. R.	El Paso	2.80	3.60	5.10
Magdalena..."	Pueblo	5.00	6.50	8.50
	Denver	8.50	9.00	11.50
	Kansas City	7.00	8.50	13.00
Socorro....."	El Paso	2.80	3.20	4.70
	Pueblo	5.00	6.50	8.50
	Denver	8.50	9.00	11.50
	Kansas City	7.00	8.50	13.00
Albuquerque..."	El Paso	3.00	4.00	5.50
	Pueblo	4.50	6.00	7.00
	Denver	8.00	9.50	10.50
	Kansas City	8.00	9.00	12.00
Bernalillo..."	El Paso	3.20	4.20	5.70
	Pueblo	4.20	5.70	7.20
	Denver	5.70	7.20	9.20
	Kansas City	6.20	7.70	9.70
Wallace....."	El Paso	3.40	4.40	5.80
	Pueblo	4.20	5.70	7.20
	Denver	5.70	7.20	9.20
	Kansas City	8.20	7.70	12.00
Los Corrillos..."	El Paso	3.60	4.60	6.10
	Pueblo	4.00	5.50	7.50
	Denver	5.50	7.00	8.40
	Kansas City	8.00	7.50	12.00
Fringstaff, A.T.	El Paso	8.50	9.00	10.00
Preacott Jct."	Pueblo	7.50	8.00	12.50
	Denver	9.00	10.50	13.00
	Kansas City	9.50	11.00	13.50
Peach Spgs..."	El Paso	7.50	8.00	11.25
Hackberry..."	Pueblo	8.00	9.50	13.75
	Denver	10.50	11.00	15.20
	Kansas City	10.50	11.00	15.20
Kingman..."	El Paso	7.50	8.00	11.25
	Pueblo	8.00	9.50	13.75
	Denver	10.50	11.00	15.20
	Kansas City	10.50	11.00	15.20
El Paso	7.50	8.25	12.00	
Pueblo	8.50	10.00	14.50	
Denver	10.50	12.00	15.50	
Kansas City	11.50	12.50	16.50	
Needles...Cal.	El Paso	7.75	8.25	12.00
	Pueblo	8.50	10.00	14.50
	Denver	10.50	12.00	15.50
	Kansas City	11.50	12.50	16.50
Fenner....."	El Paso	8.25	9.75	12.75
	Pueblo	9.00	10.50	15.25
	Denver	10.50	12.00	16.50
	Kansas City	11.50	12.50	16.50
Bagdad....."	El Paso	8.50	10.00	13.75
	Pueblo	9.50	11.00	18.50
	Denver	11.50	12.50	17.20
	Kansas City	11.50	13.00	17.20
El Paso	8.00	10.50	14.50	
Pueblo	10.00	11.50	17.00	
Denver	11.50	13.00	18.00	
Kansas City	12.00	13.50	18.00	
El Paso	8.50	11.00	15.21	
Pueblo	10.50	12.00	17.71	
Denver	12.00	13.50	22.60	
Kramer....."	El Paso	8.50	11.00	15.21
	Pueblo	10.50	12.00	1

# THE PUEBLO Smelting and Refining Company, PUEBLO, COLORADO.

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THE KENDALL PROCESS is the most efficient method of using cyanide for the extraction of precious metals from their ores: wherever the process has been adopted the result has been increased, percentages of values recovered and saving of time; material reduction in consumption of chemical has also been demonstrated with respect to several classes of ores.

All ores, without exception, amenable to cyanide treatment, can be treated to better advantage by the Kendall Process; this can be accepted as an axiom.

The manager of one of the largest mines in the Mercur district, Utah, telegraphs as follows: "We now begin to understand dioxide process; last 20 days treated 220 tons per day of \$26.50 ore, average of all tailings samples \$83."

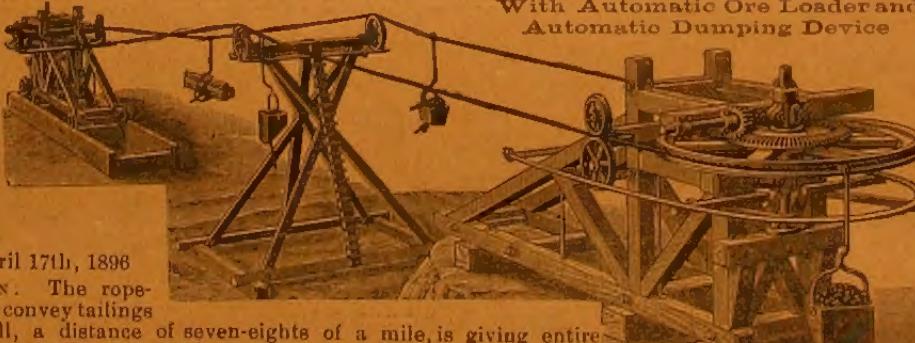
Owners of mines and reduction works can obtain full information on application to the

**Kendall Gold and Silver Extraction Co.**

47 Broadway. New York City

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\*  
For Conveying  
Ore,  
Cordwood,  
Etc.



EMPIRE, NEVADA, April 17th, 1898

Vulcan Iron Works.—GENTLEMEN. The rope-way furnished by your Company to convey tailings from Morgan Mill to Mexican Mill, a distance of seven-eights of a mile, is giving entire satisfaction. We transport 200 tons of tailings in ten hours; one man does the whole business, including elevating tailings from hopper in the ground, operating Vulcan self-loader, and attending to the ropeway generally. The self-dumper requires no attention whatever. The Vulcan loader I consider the best feature in the whole Ropeway, making it possible for one man to load 200 tons in ten hours.

Yours very truly,

J. P. WOODBURY, Supt.

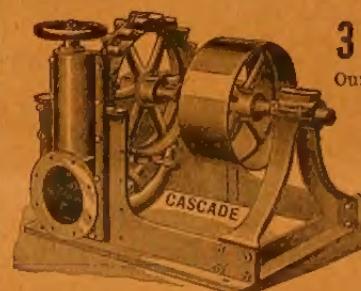
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Manufacturers of Mining Machinery,  
SAN FRANCISCO, CAL

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PURCHASERS OF  
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Special Facilities for Handling ores from the South-West and Mexico  
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Our experience of 33 YEARS  
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Miners will find the ore tariffs on page 22 reliable. We have special arrangements with the different railroads to receive any changes as soon as made.

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Samples by Mail or Express Receive Prompt Attention

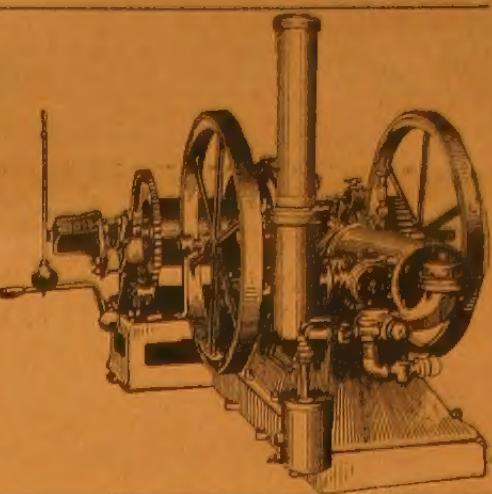
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Gold, silver and lead, \$1.00; any two of the above, 75c; any one of above, 50c; copper analysis, 50c; platinum, nickel or tin, \$5.00.  
Write for full price list and mailing envelopes.

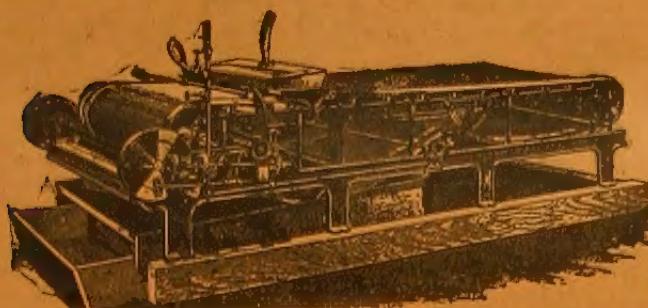
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**HERCULES GAS OR GASOLINE ENGINE**  
 FOR HOISTING, PUMPING AND MILLING  
 FROM  
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Hendy Improved Triumph Concentrator

Nos. 38 to 44 Fremont St., San Francisco

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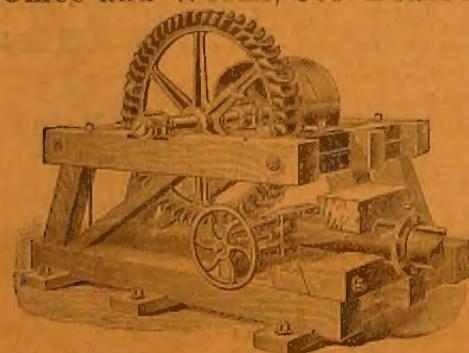
Johnston Concentrators,  
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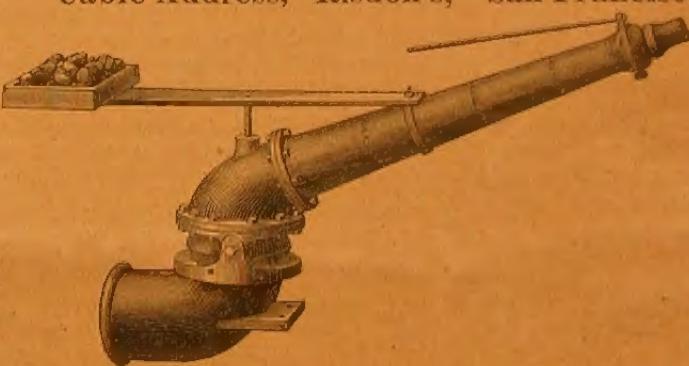
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The above cut shows the general arrangement of Knight's Standard Water Wheels, of which there are more than 450 in use in California alone. These wheels are made from 2 feet to 6 feet in diameter, from 10 to 1000 horse power, and adapted to all heads and purposes. Descriptive circulars mailed free on application.



IMPROVED HYDRAULIC GIANT  
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